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U.S. Patent Application No. 09/833,202
Amendment dated May 11, 2007
Response to Office Action of February 12, 2007

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

1. (Previously presented) The fuel cell of claim 17, wherein said active layer has a thickness of 10 microns or less in said gas diffusion electrode or counter-electrode or both.
2. (Withdrawn) The fuel cell of claim 1, wherein said solid electrolyte membrane comprises at least one modified carbon product, wherein said modified carbon product comprises a carbon product having attached at least one organic group.
3. (Previously presented) The fuel cell of claim 17, wherein said gas diffusion electrode and gas diffusion counter-electrode each comprise a blocking layer and said active layer.
4. (Previously presented) The fuel cell of claim 3, wherein said blocking layer comprises at least one modified carbon product, wherein said modified carbon product comprises a carbon product having attached at least one organic group.
5. (Previously presented) The fuel cell of claim 3, wherein said active layer has a thickness of from 2 microns to about 5 microns.
6. (Previously presented) The fuel cell of claim 3, wherein said active layer further comprises a metal catalyst.
7. (Original) The fuel cell of claim 3, wherein said active layer has no fluoropolymer binder present.
8. (Previously presented) The fuel cell of claim 1 wherein said solid electrolyte membrane comprises a fluoropolymer.

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9. (Withdrawn) A fuel cell comprising a gas diffusion electrode, a gas diffusion counter-electrode, a solid electrolyte membrane located between the electrode and counter-electrode, wherein said solid electrolyte membrane comprises at least one modified carbon product, wherein said modified carbon product comprises a carbon product having attached at least one organic group.

10. (Original) The fuel cell of claim 1, wherein said organic group is $-C_6H_4SO_3^-$.

11. (Withdrawn) A method to reduce the thickness of a solid electrolyte membrane comprising forming said electrolyte membrane with a modified carbon product, wherein said modified carbon product comprises a carbon product having attached at least one organic group.

12. (Withdrawn) A method for increasing catalyst accessibility in an electrode comprising forming an active layer with a modified carbon product in the absence of a fluoropolymer binder, wherein said modified carbon product comprises a carbon product having attached at least one organic group.

13. (Withdrawn) The method of claim 12, further comprising the deposition of a catalytic material on said modified carbon product.

14. (Canceled)

15. (Withdrawn) The method of claim 11, wherein said organic group is a proton conducting group, an electron conducting group, or both.

16. (Withdrawn) The method of claim 12, wherein said organic group is a proton conducting group, an electron conducting group, or both.

17. (Currently amended) A fuel cell comprising a gas diffusion electrode having an active layer, a gas diffusion counter-electrode, a solid electrolyte membrane located between the electrode and counter-electrode, and wherein said active layer comprising a carbon support that

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comprises at least one modified carbon product, wherein said modified carbon product comprises a carbon product having attached at least one organic group that is proton-conducting and catalyst particles, wherein said catalyst particles are attached or absorbed onto the modified carbon product.

18. (Canceled)

19. (Previously presented) The fuel cell of claim 17, wherein said catalyst particles comprise Pt.

20. (Previously presented) The fuel cell of claim 17, wherein said active layer has a thickness of from about 2 microns to about 5 microns.

21. (Canceled)

22. (Previously presented) The fuel cell of claim 17, wherein said active layer is formed directly on the solid electrolyte membrane.

23. (Canceled)

24. (Currently amended) The fuel cell of claim ~~24~~ 17, wherein said catalyst particles that are attached or adsorbed onto the modified carbon product is a catalyzed treated carbon product.

25. (Previously presented) The fuel cell of claim 24, wherein said catalyzed treated carbon product is partially or fully hydrophobic.

26. (Previously presented) The fuel cell of claim 17, wherein said modified carbon product is hydrophobic.

27. (Previously presented) The fuel cell of claim 17, wherein said modified carbon product further comprises hydrophobic groups.

28. (Previously presented) The fuel cell of claim 17, wherein said active layer further

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comprises a second modified carbon product having attached hydrophobic organic groups.